



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>7</sup> :</b> <b>A61F 13/15</b>	<b>A1</b>	<b>(11) International Publication Number:</b> <b>WO 00/59438</b> <b>(43) International Publication Date:</b> 12 October 2000 (12.10.00)
<b>(21) International Application Number:</b> PCT/US00/09411 <b>(22) International Filing Date:</b> 7 April 2000 (07.04.00) <b>(30) Priority Data:</b> 60/128,267      8 April 1999 (08.04.99)      US <b>(71) Applicant (for all designated States except US):</b> THE PROCTER & GAMBLE COMPANY [US/US]; One Procter & Gamble Plaza, Cincinnati, OH 45202 (US). <b>(72) Inventors; and</b> <b>(75) Inventors/Applicants (for US only):</b> WALKER, Richard, III [US/US]; 3251 Lamarc Trail, Cincinnati, OH 45241 (US). HASSE, Margaret, Henderson [US/US]; 501 Reily Road, Wyoming, OH 45215 (US). VENTURA, Peter, David [US/US]; 3809 Forest Avenue, Cincinnati, OH 45212 (US). OUELLETTE, William, Robert [US/US]; 11987 Blackhawk Circle, Cincinnati, OH 45240 (US). LEE, Yann-Per [-/US]; 6386 Kings Arms Way, Fairfield, OH 45014 (US). NOEL, John, Richard [US/US]; 1526 Shenandoah, Cincinnati, OH 45237 (US). <b>(74) Agents:</b> REED, T., David et al.; The Procter & Gamble Company, 5299 Spring Grove Avenue, Cincinnati, OH 45217-1087 (US).		<b>(81) Designated States:</b> AE, AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), DM, EE, EE (Utility model), ES, FI, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
<b>(54) Title:</b> ABSORBENT ARTICLE WITH IMPROVED COMBINATION OF SKIN FEEL AND FLUID HANDLING		
<b>(57) Abstract</b>  <p>The present invention relates to absorbent articles such as sanitary napkins, panty liners, diapers, adult incontinence pads and briefs, and the like having an improved combination of skin feel and fluid handling properties, such as fluid acquisition and retention. This improved combination is provided by structures where the absorbent core has a high capillary pressure which helps the core to rapidly acquire bodily fluids deposited on the body surface of the absorbent article and to retain such fluids after they have been acquired. Absorbent gelling materials with reduced gel blocking are a preferred core component that aids in fluid retention by providing an osmotic fluid retention mechanism. The topsheets of the present invention cooperate with the core by being both fluid permeable and providing a barrier to rewet of acquired fluids. The topsheet also has a multiplicity of fibrils that create the body surface of the absorbent article. These fibrils are disposed at a density and have dimensions and mechanical properties such that the body surface has a soft, velutinous body feel.</p>		



*FOR THE PURPOSES OF INFORMATION ONLY*

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
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EE	Estonia						



# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>7502M/4M</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/US 00/ 09411</b>	International filing date (day/month/year) <b>07/04/2000</b>	(Earliest) Priority Date (day/month/year) <b>08/04/1999</b>
Applicant  <b>THE PROCTER &amp; GAMBLE COMPANY et al.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

### 1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☒ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures.



# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US 00/09411

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☒ Claims Nos.: 1-5 (ALL IN PART)  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.





## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 1-5 (ALL IN PART)

Present claims 1-5 relate to a product defined by reference to a desirable characteristic or property, namely cooperation of the topsheet and the absorbent core in order to achieve certain effects.

The claims cover all products having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such products. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the product by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the products as stated in sample No 2 in page 27, having a microapertured topsheet with surface energy gradients and an absorbent core having a mixture of softwood and hardwood fibers as described in page 15 2nd paragraph - page 16 last paragraph of the description of the claimed application.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.



## INTERNATIONAL SEARCH REPORT

International Application No

PC/ISA 00/09411

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61F13/15

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 767 648 A (PROCTER & GAMBLE) 16-April 1997 (1997-04-16) claims; figures ---	1-5,8-10
A	US 5 300 565 A (BERG CHARLES J ET AL) 5 April 1994 (1994-04-05) column 24, line 8 -column 25, line 38 column 40, line 20 - line 44 ---	1-5,12, 13
A	US 5 356 403 A (FAULKS MICHAEL J ET AL) 18 October 1994 (1994-10-18) column 7, line 13 -column 8, line 62 -----	1-5,13, 14

☐ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \* & \* document member of the same patent family

Date of the actual completion of the international search

2 August 2000

Date of mailing of the international search report

14. 08. 2000

Name and mailing address of the ISA

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Authorized officer

Douskas, K



# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/09411

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0767648      A	16-04-1997	AU 2824795 A	25-01-1996
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		DE 69512067 D	14-10-1999
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		JP 10502006 T	24-02-1998
		NO 965579 A	28-02-1997
		AT 184184 T	15-09-1999
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		AU 1546999 A	15-04-1999
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		HU 77936 A	30-11-1998
		HU 77906 A	28-09-1998
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		NO 965578 A	28-02-1997
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		WO 9600548 A	11-01-1996
		WO 9600549 A	11-01-1996
		US 6025049 A	15-02-2000
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		EP 0525049 A	03-02-1993
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		NZ 237618 A	27-09-1993
		PT 97236 A,B	31-01-1992
		SG 55143 A	21-12-1998
		RU 2091081 C	27-09-1997
		WO 9115368 A	17-10-1991



# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/09411

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5300565 A		US 5330822 A	19-07-1994
		US 5397626 A	14-03-1995
US 5356403 A	18-10-1994	AU 668607 B	09-05-1996
		AU 5200693 A	09-06-1994
		BR 9304732 A	07-06-1994
		CA 2090796 A	31-05-1994
		CN 1088078 A	22-06-1994
		EP 0600454 A	08-06-1994
		JP 6205806 A	26-07-1994
		MX 9302362 A	31-05-1994
		ZA 9307481 A	26-04-1994





## PATENT COOPERATION TREATY

PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 11 JUL 2001

WIPO PCT

Applicant's or agent's file reference 7502M/4M	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US00/09411	International filing date (day/month/year) 07/04/2000	Priority date (day/month/year) 08/04/1999
International Patent Classification (IPC) or national classification and IPC A61F13/15		
Applicant THE PROCTER & GAMBLE COMPANY et al.		


1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
 

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☐ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  06/10/2000	Date of completion of this report  09.07.2001
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Groetzinger, J  Telephone No. +49 89 2399 2058





# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US00/09411

## I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, pages:**

1-36 as originally filed

**Claims, No.:**

1-15 as originally filed

**Drawings, sheets:**

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/US00/09411

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application.

☒ claims Nos. 1-5.

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 1-5 are so unclear that no meaningful opinion could be formed (*specify*):  
**see separate sheet**

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for the said claims Nos. 1-5.

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

☐ the written form has not been furnished or does not comply with the standard.

☐ the computer readable form has not been furnished or does not comply with the standard.

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:  
**see separate sheet**



**Ad III:**

1. No international search report has been established to claims 1-5 and an international preliminary examination (Rule 66.1(e) PCT) therefore cannot be carried out.
2. Present claims 1-5 relate to a product defined by reference to a desirable characteristic or property, namely cooperation of the topsheet and the absorbent core in order to achieve certain effects.  
The claims cover all products having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such products. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope was impossible.

**Ad VII:**

1. An attempt is made to define the product by reference to a result to be achieved (Art. 6 PCT).
2. To meet the requirements of Rule 6.3(b) PCT the independent claim should have been properly cast in the two part form, with those features which in combination are part of the prior art being placed in the preamble.
3. Reference signs in parentheses should have been inserted in the claims to increase their intelligibility, Rule 6.2(b) PCT. This applies to both the preamble and characterising portion.
4. The references to documents being incorporated by reference should have been deleted. If it is felt that the disclosure of these documents is necessary for an understanding of the present invention appropriate expressis verbis description should be introduced (see Guidelines CII, 4.18).
5. The reference to the "spirit" of the invention in the final paragraph on page 36





**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/US00/09411

renders the intended scope of protection unclear and should have been deleted.

6. The references to US Patent Application Serial Numbers should have been changed to the publication numbers.

